Aviation Spare Parts Inventory Funding For Readiness

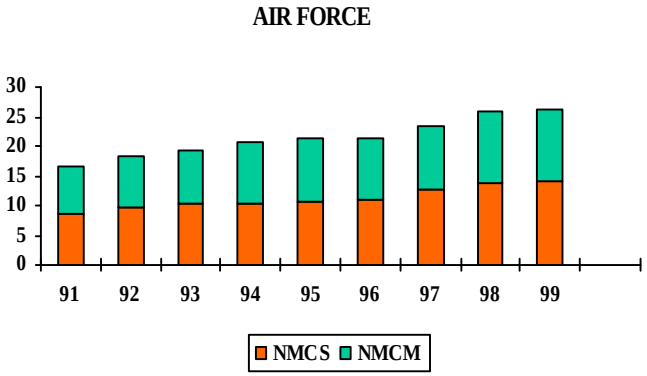
1 Feb 2001

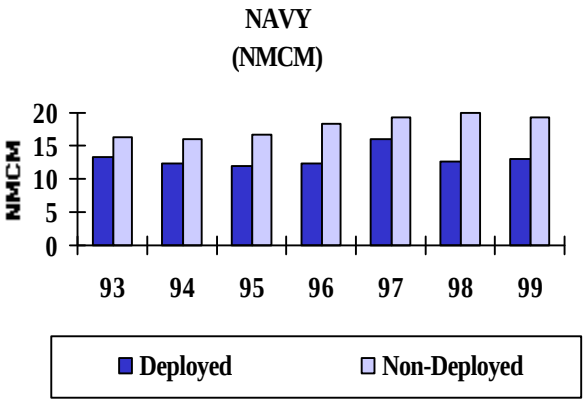
Agenda

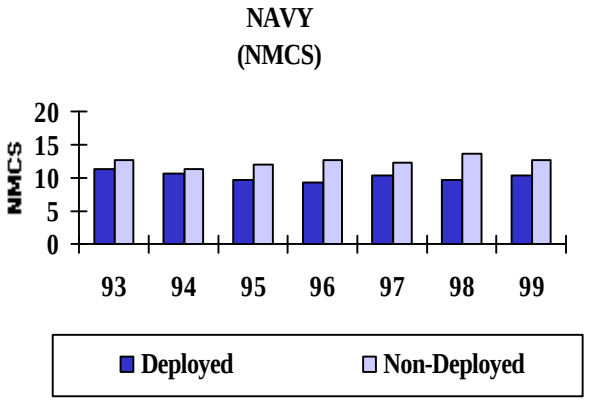
- **Background**
- **Consumables**
- **Reparables**
- **Summary of Actions**
- **Conclusion**

Aviation Readiness Trends

- **Measured by percentage of aircraft not capable of performing any of its missions -- Not Mission Capable (NMC)**
- **Two NMC components**
  - **Supply (NMCS): lack of repair parts**
  - **Maintenance (NMCM): lack of maintenance capability**

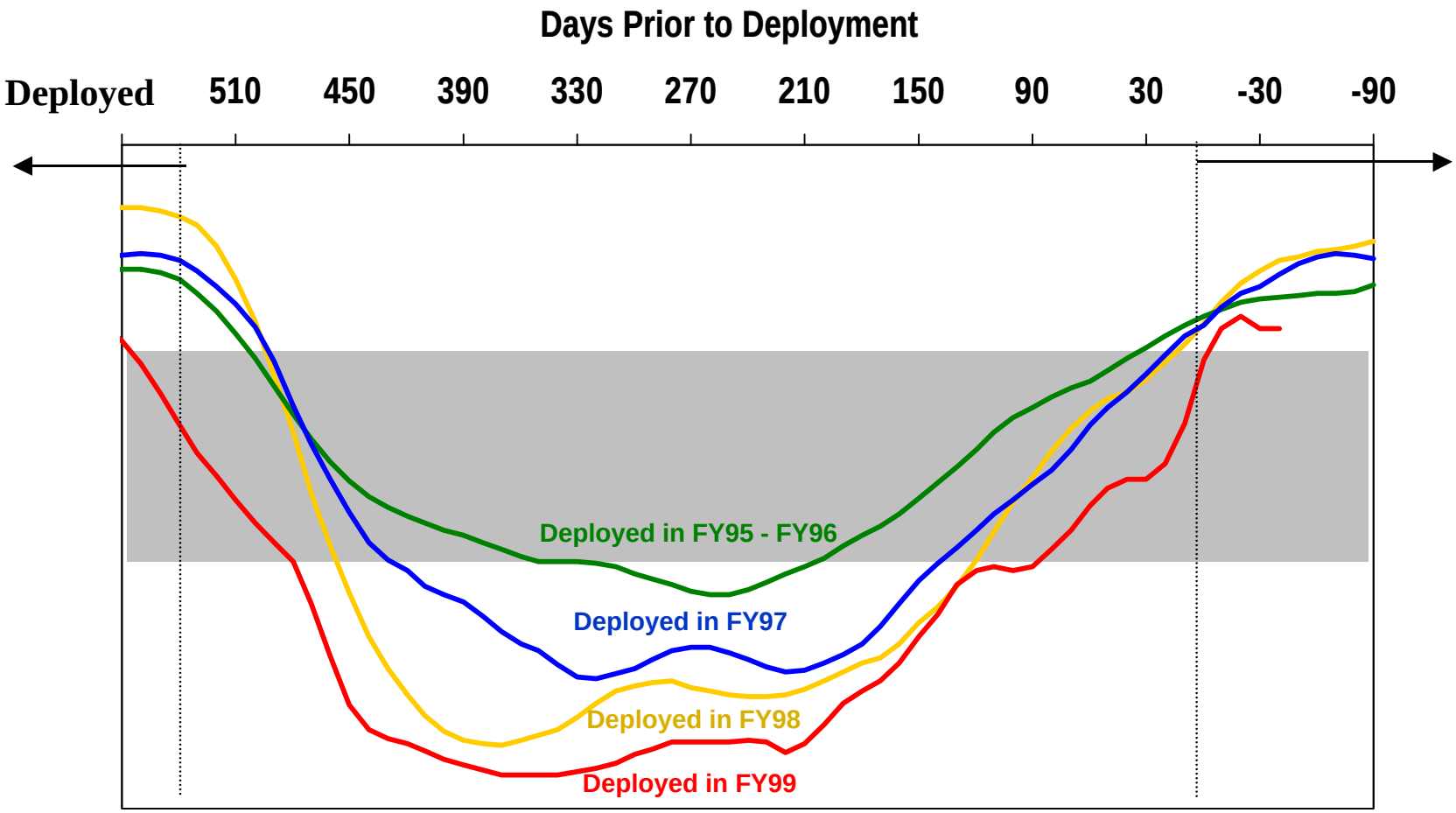






NMC rates are much of the reality behind the headlines on declining readiness.

Navy Non-Deployed Airwing Readiness



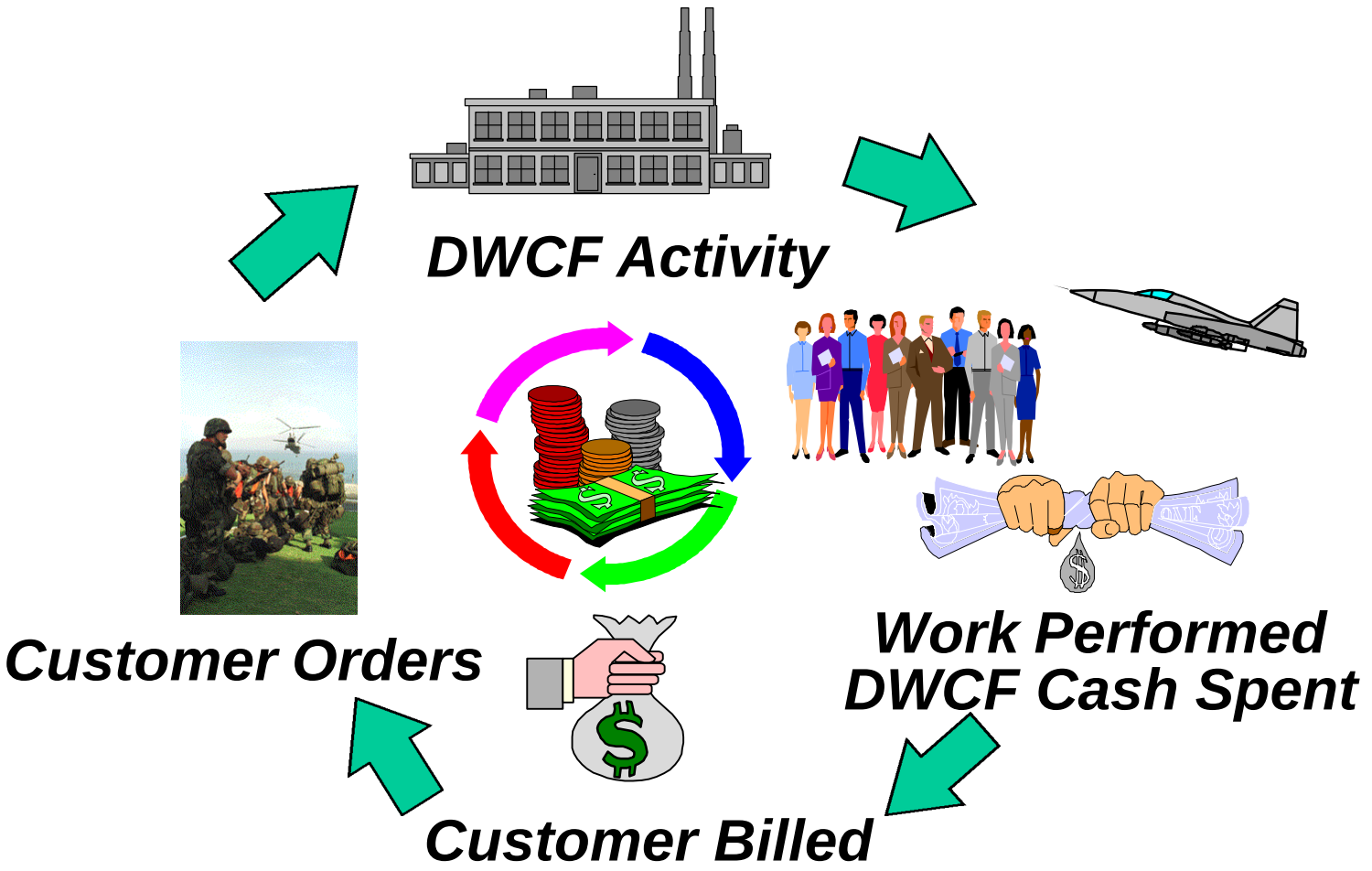
Supply

- **Consumables**
  - **Consumed in use or cannot be economically repaired**
  - **Installed plane side and for repair of reparables**
  - **Examples: Washer ($.16); Flameholder afterburner ($23,971)**
- **Reparables**
  - **Durable item which, when unserviceable, can normally be economically restored to a serviceable condition through repair by an intermediate or depot level maintenance activity**
  - **Examples: Altimeter ($3,573); Aileron ($83,825)**

- **Identified consumable and reparable contribution to aviation NMCS:**

	AF	Navy
Consumable	52%	43%
Reparable	48%	57%

Defense Working Capital Funds



Spares support requires forces have funds to buy parts and supply system has parts to sell.

Consumables

- **Indicators are that the customer has sufficient funding**
  - **In execution customer is ordering needed parts**

If not customer funding, what?

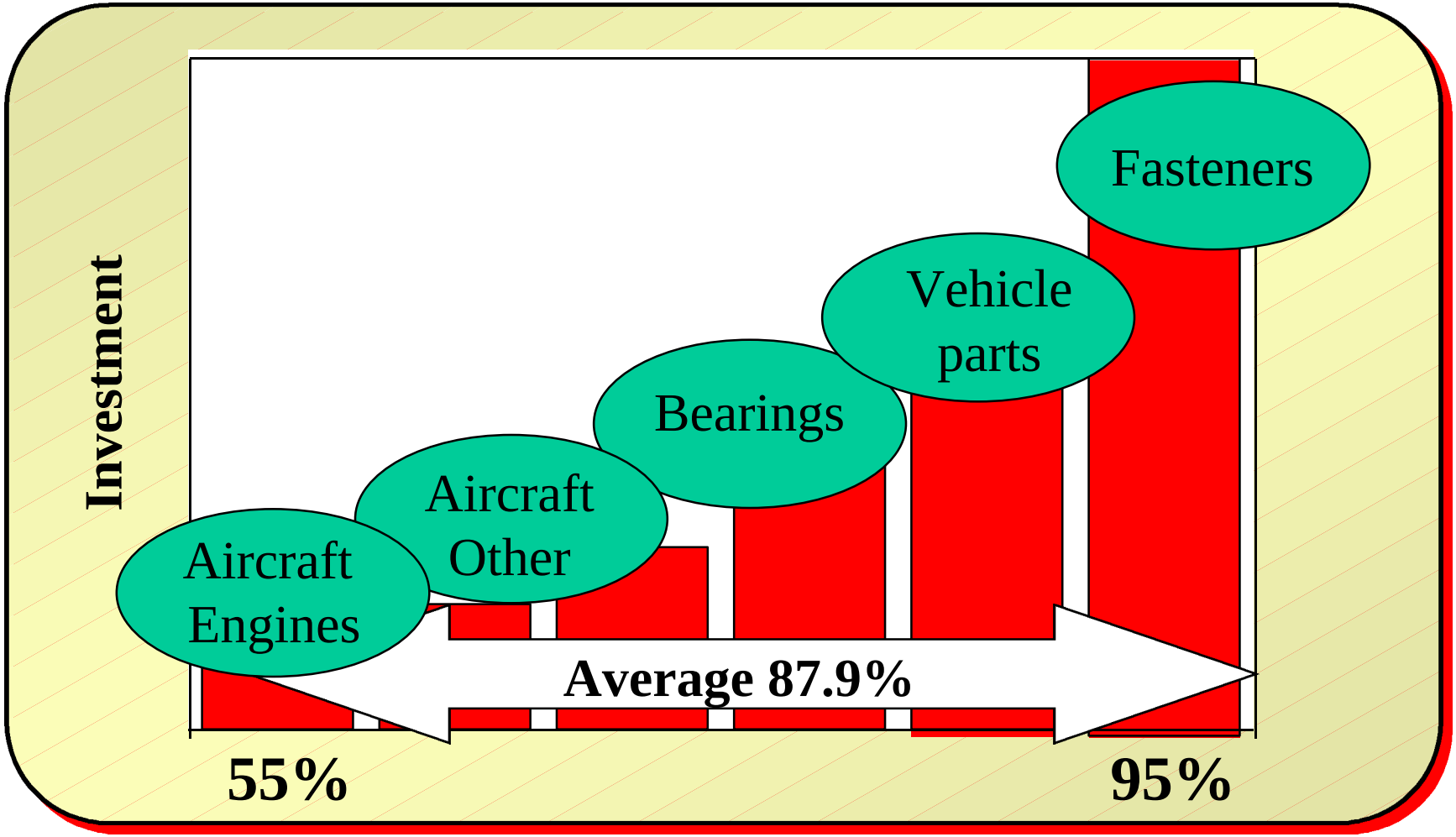
- **Hypothesis: DLA consumable investment policy contributing to readiness problem (stock not on shelf)**
  - **Consumable Item Transfer**
  - **Feedback from supply system customers**
  - **Investment policy favors low cost, high volume items**

If hypothesis correct then high cost/low volume consumables are causing NMCS.

Testing the Hypothesis

- **Reviewed consumables that degraded readiness**
- **Identified a set of consumables that consistently contributed to NMC rate**
- **Sorted the problem set of consumables by cost and demand frequency**
- **Reviewed DLA investment model to determine impact on aviation part availability**

Investment Strategy Driven by Model



DLA Investment Strategy

(NMCS Requisitions)

Requisition Volume

Cost

High Cost -- High Demand Example **Fuel Pump - $1,370.00**	**High Cost -- Low Demand** Example **Flameholder Afterburner** **$23,973.01** **76%**
Low Cost -- High Demand Example **Insulating Sleeving - $ .65**	**Low Cost -- Low Demand** Example **Lead Electrical $6.07**

High cost/low volume category cause 76% of the problem.

Reparables

- **Indicators are that the customer has sufficient funding**
  - **In execution customer is ordering needed parts**

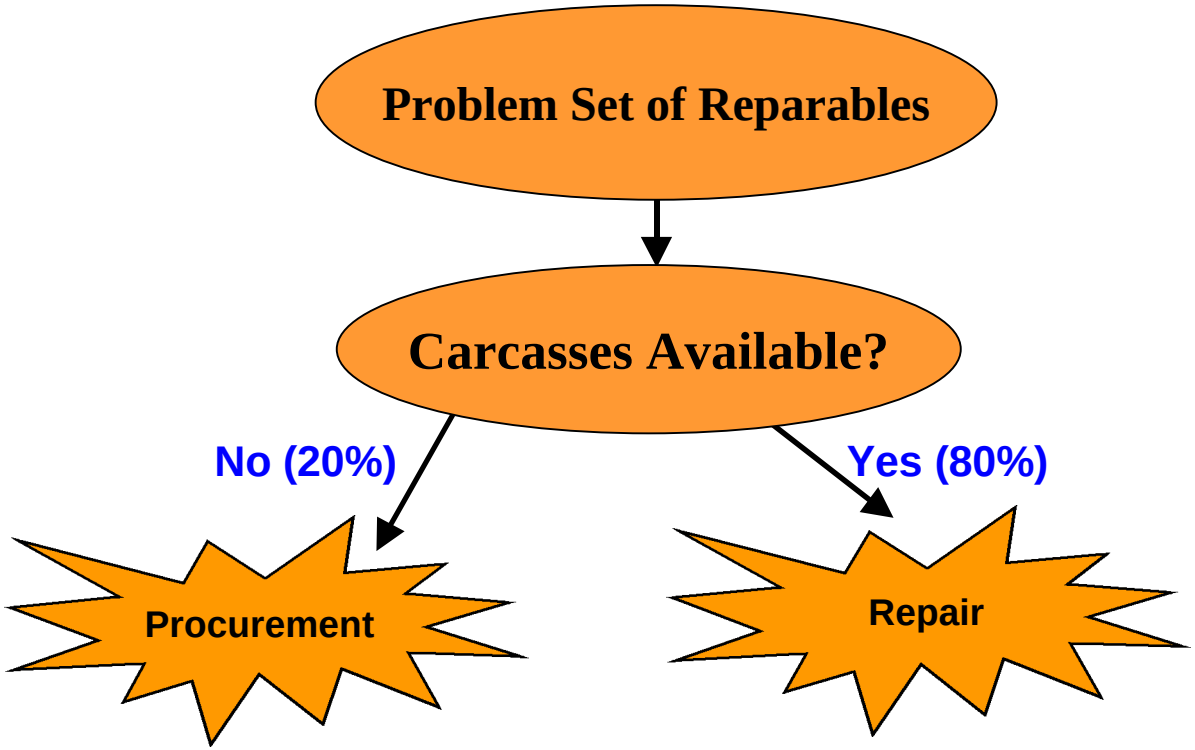
If not customer funding, what?

- **Potential problems**
  - **Not enough inventory**
  - **Constraints on ability to do timely repair of available carcasses**
    - **Carcasses not in the right place**
    - **Insufficient capacity -- test equipment, manpower, etc.**
    - **Lack of repair parts needed to fix carcass**
    - **No order from item manager**

Reparables Methodology

- **Reviewed reparables that degraded readiness**
- **Identified a set of reparables that consistently contributed to NMC rate**
- **Looked at requirements models -- carcasses you need to fix or buy**
- **Identified catch-up requirement -- difference between the number of reparables available and those needed**
- **Conducted structured interviews at depots to determine cause of repair constraints**

Air Force Procurement Versus Repair



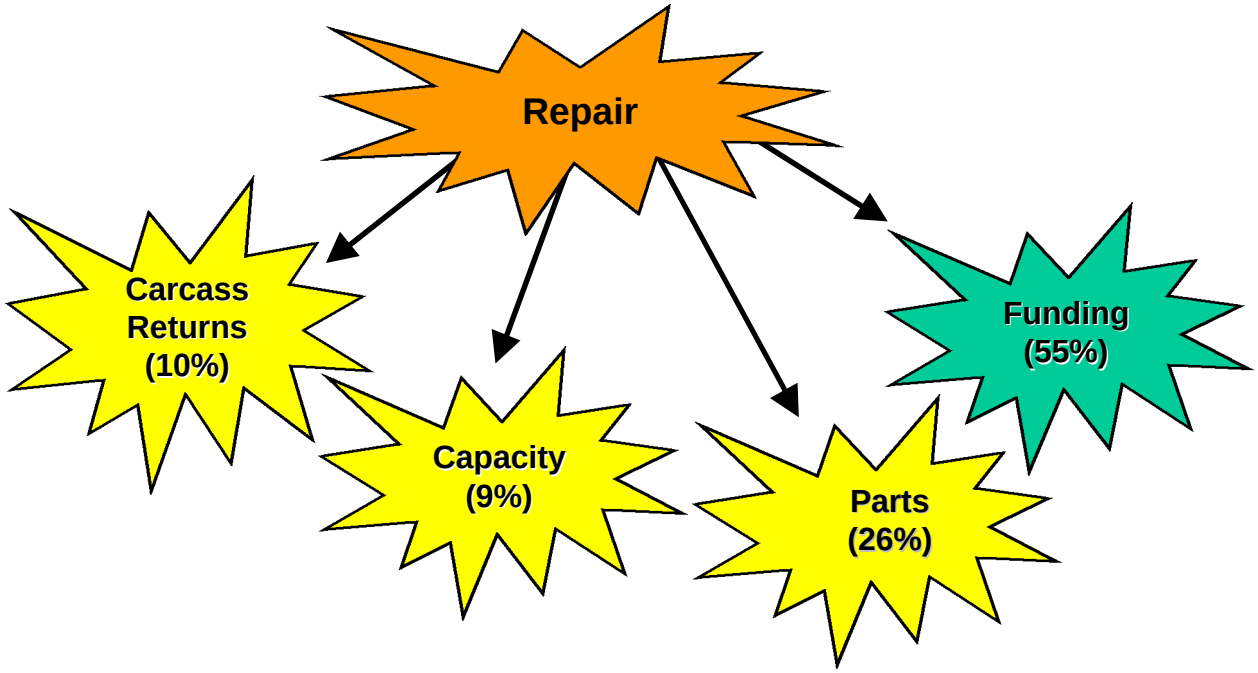
Based on requirements determination data (Sept 99 stratification)

Air Force
Catch Up Requirement - Repair

- **Repair catch up: Sept 99 $369M**
- **<u>The catch up requirement</u>: The difference between the number of serviceable components available and those needed. Comprised of:**
  - **those that can be repaired (repair catch up) and**
  - **those which must be procured (procurement catch up).**

Repair catch up requirement has grown 38% since Sept 98

Air Force Depot Repair Constraint for Problem Set of Reparables



Surveyed repair activities to determine cause of reparable shortfalls

Air Force
Depot Repair Constraint

- **Source of depot repair constraint for sample of problem parts causing MICAPs (June 00)**
  - **No carcass available** **10%**
  - **Depot capacity constraint** **9%**
  - **Consumable part shortage** **26%**

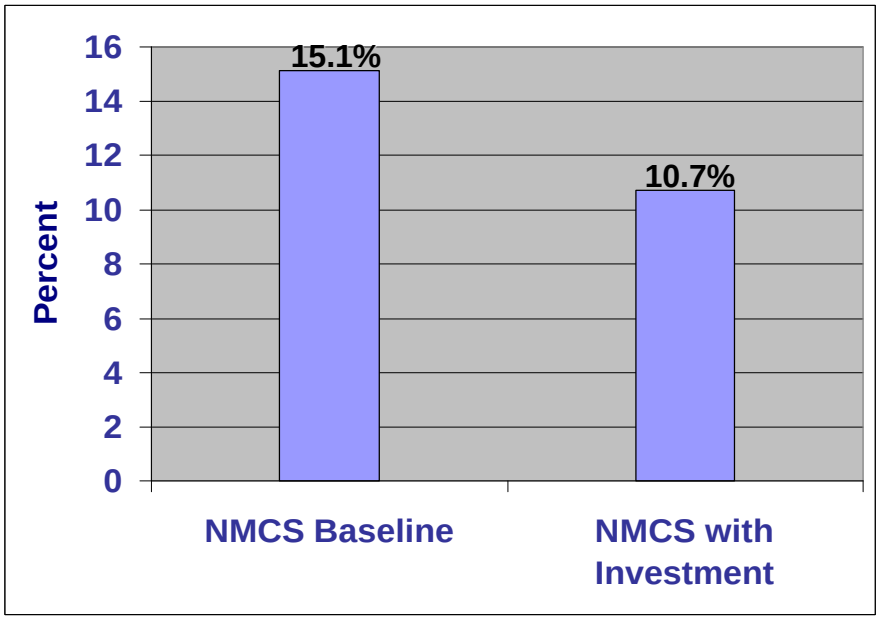
    Subtotal: **45%**
  - **Apparent lack of funding** **55%**

    Total: **100%**
- **Additional funding executable**
  - **Executable repair catch up:** **$369M * .55 = $203M**

Total catch up executable in future years

Air Force Findings

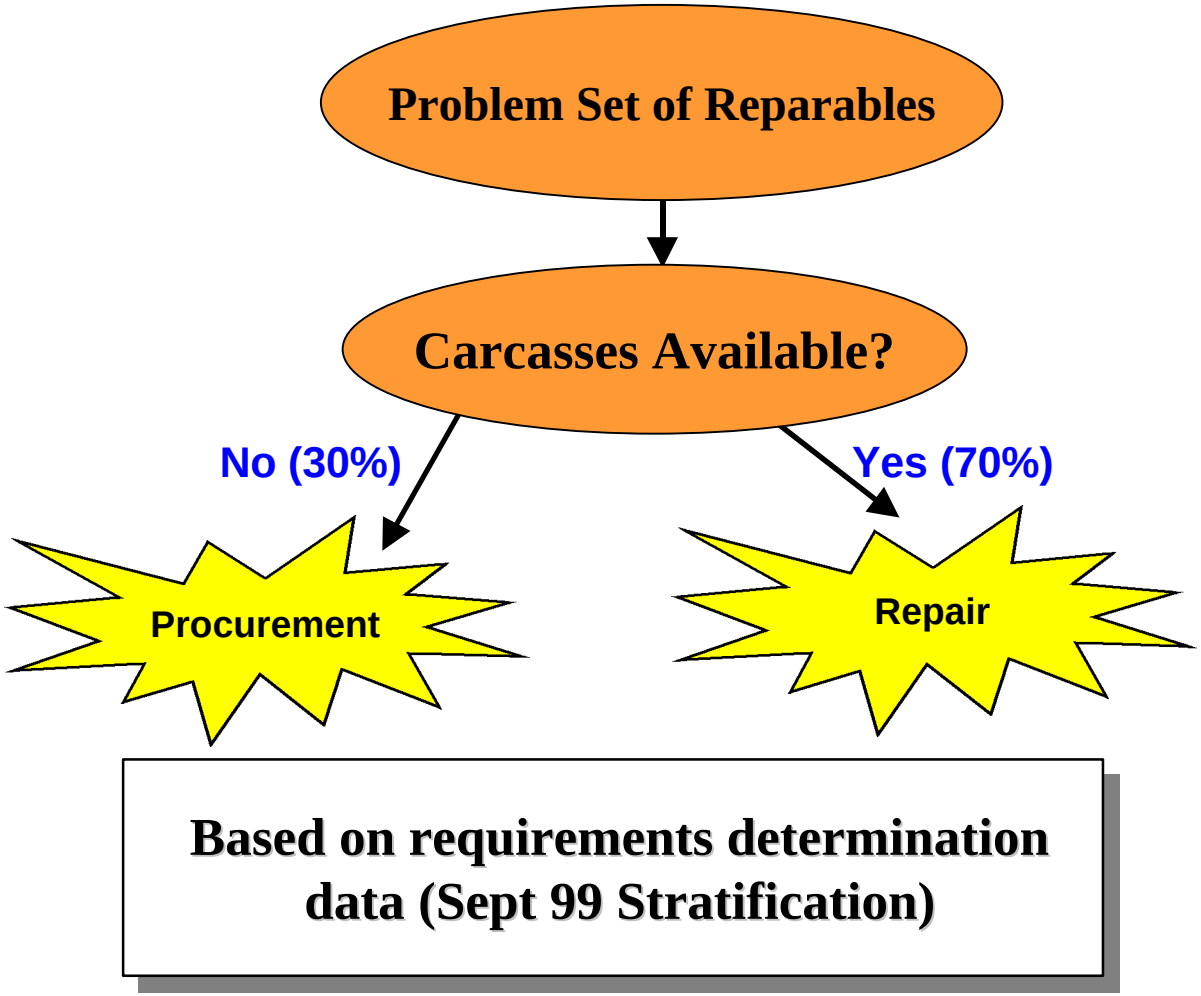
- **Identified repair catch-up of $369M**
- **Repair catch-up growing at approximately $40M per year**



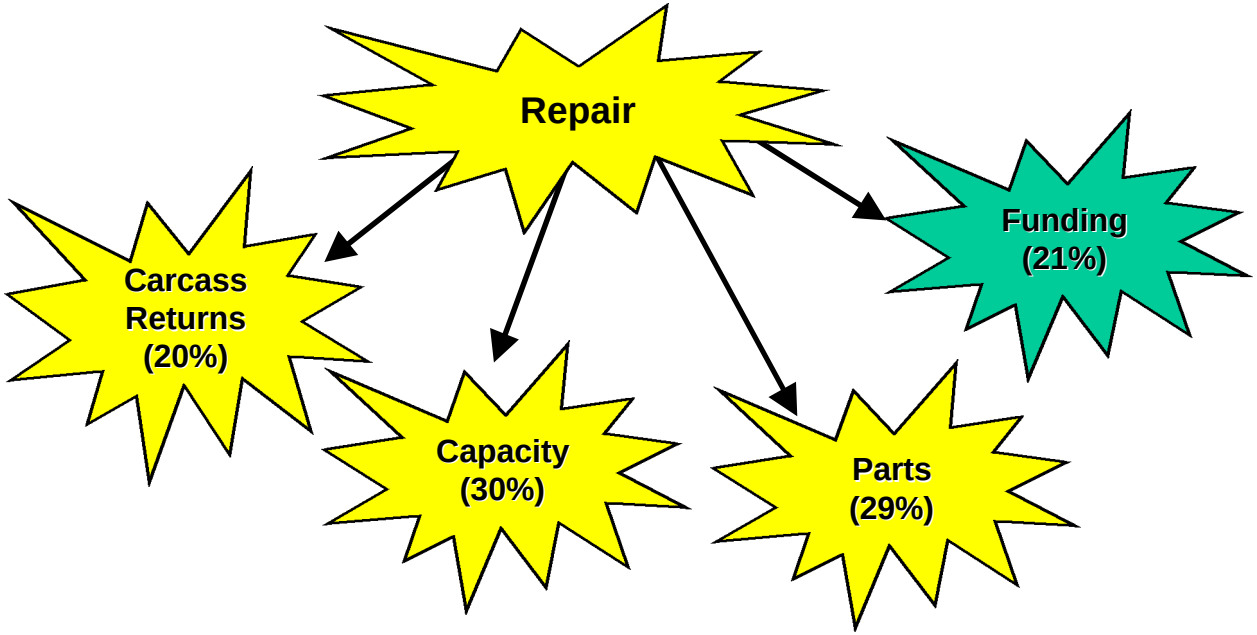
Estimated NMCS reduction of up to 4.4% by funding catch-up.

220 Aircraft worth $17.6B

Navy
Procurement Versus Repair



Navy Depot Repair Constraint for Problem Set of Reparables



Surveyed repair activities to determine cause of reparable shortfalls

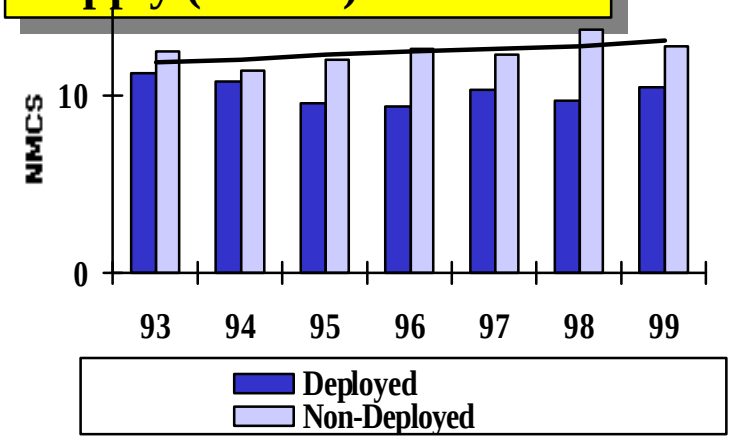
Navy Depot Repair Constraint

- **Though not without problems…analysis of the sample set of parts showed no single driving depot repair constraint**
- **Significant shortfall of reparable assets at the operating activities and in the supply pipeline:**
  - **No carcass available (procurement shortfall): 30%**
  - **Carcass returns (20% of 70% depot constraint) 14%**
  - **Total: 44%**
- **Hypothesis: Unfunded and unfilled reparable part allowances at ships and stations are degrading reparable availability and readiness.**

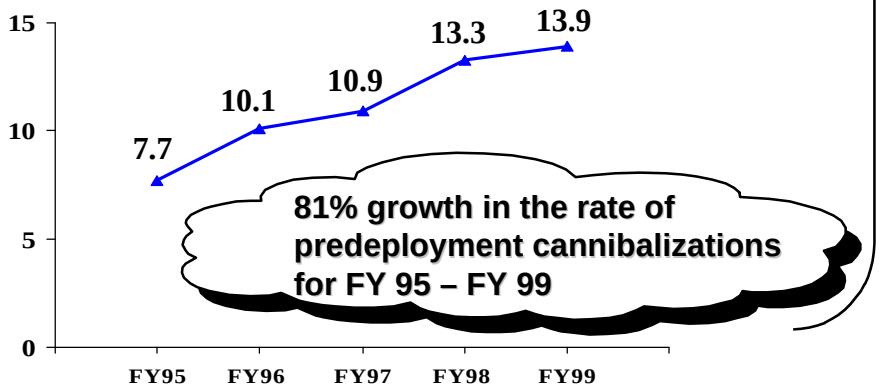
Retail allowance backlog: Allowances for parts for ships and stations that have not been funded.

Navy Retail Allowance Backlog

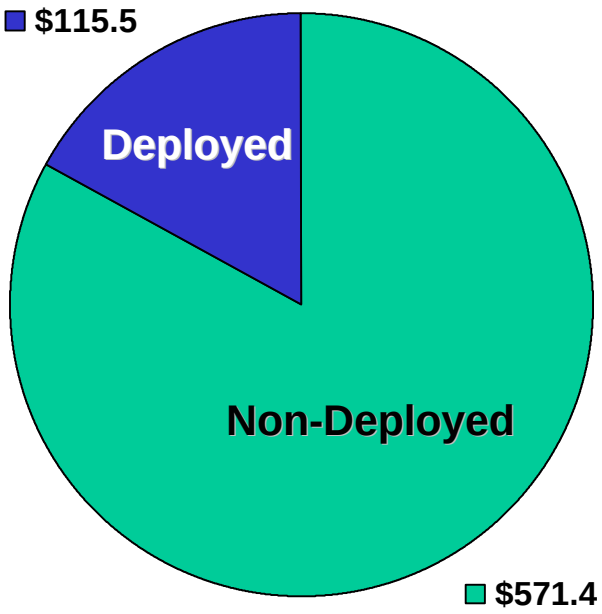
Not Mission Capable Supply (NMCS) - Aviation



Pre-deployment Cannibalizations Per 100 Flying Hours



Retail Allowance Backlog

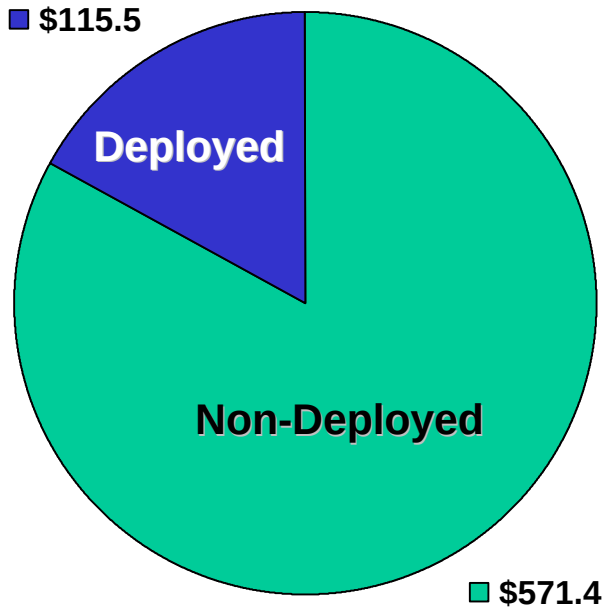


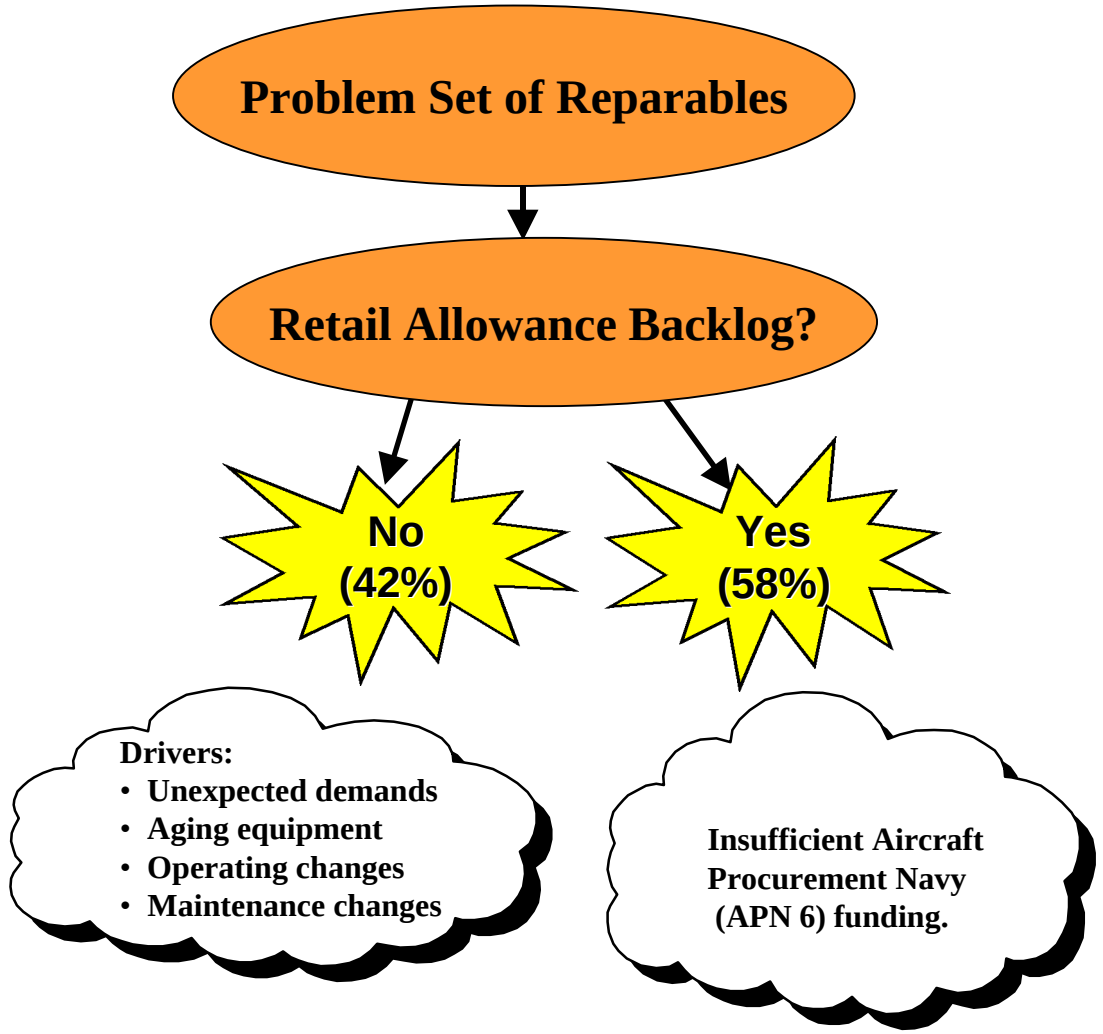
* TY$, Millions

Effective June 00

Navy Backlog Versus Problem Set of Reparables

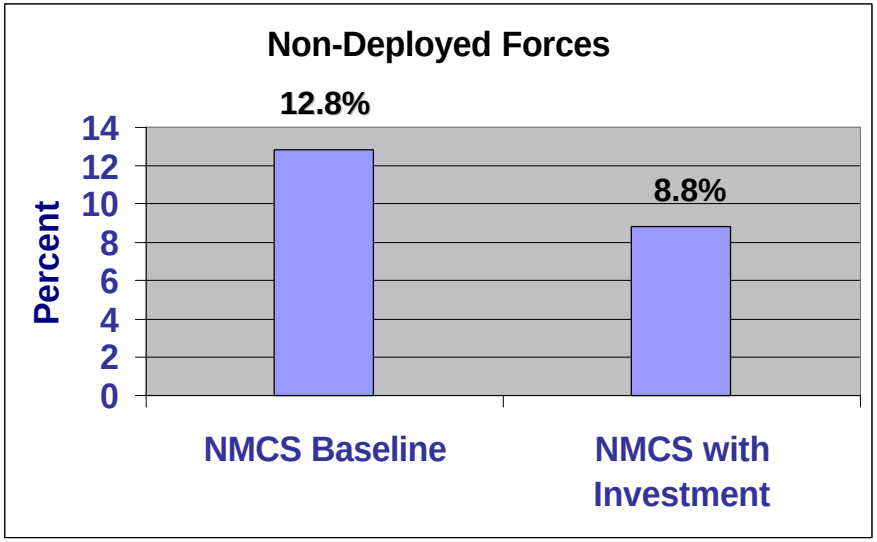
Retail Allowance Backlog





Navy Findings

- **Identified unfunded catch-up requirement of $571M for Non-Deployed forces (stations) and $116M for Deployed forces (ships)**
- **58% of problem set of reparables found in the catch-up requirement for Non-Deployed forces**



Estimated NMCS reduction of up to 4% by funding catch-up.

160 Aircraft worth $12.8B

ADoDCAS 2001

OSD/PA&E

Summary of Actions

- **DLA provided $500M to increase inventory levels for high cost/low volume aviation consumable parts**
  - **Delivery of parts has started…will continue through FY04**
- **Air Force provided $609M to fund repair catch up and to prevent future reoccurrence**
  - **Repairs and deliveries will commence in FY02 with most parts delivered by FY04**
- **Navy provided $355M to repair or procure parts for retail inventory levels**
  - **Deliveries will begin in FY04 and continue through FY08**

Conclusion

- **Aviation material readiness is an ongoing concern**
- **Measures taken to reverse decline in materiel readiness**
  - **Funding should help reduce and prevent reoccurrence of spare parts problems**
  - **Need to measure effectiveness of actions and ensure continued readiness focus**
- **Ongoing efforts will further identify ways for aviation depots to support readiness**
- **Opportunities exist through resourcing and process improvement to ensure supply system efficiently supports desired readiness**

Readiness is the yardstick for measuring success.